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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER				
WONG, BLANCHE				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/767,520

Applicant(s)

KALMANEK ET AL.

Examiner

Blanche Wong

Art Unit

2419

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CD/CD)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed November 3, 2008 have been fully considered but they are not persuasive.

With regard to the 112, 1st rejection to claim 19, Applicant states "the limitation of 'grouping the local interfaces into connectivity classes' is enabled by the specification". Amendment, dated November 3, 2008, p. 4, lines 17-19. For support, Applicant cites specification, p. 12, lines 257-261, "a set of NBMA interfaces attached to one OSPF router that are connected to a single NBMA network" to describe an NBMA network numbering. However, Examiner respectfully disagrees that the local interfaces are necessary NBMA interfaces, that the router is an OSPF router, that the routers are connected to a single NBMA network, and whether NBMA network numbering is used.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., NBMA interfaces, one OSPF router, a single NBMA network, NBMA network numbering) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, Applicant states "it is clear how the 'grouping' limitation is related to the previous limitations in claim 19, because the local interfaces are assigned numbers

and grouped into connectivity classes, and information identifying the assigned numbers and the connectivity classes are encoded into a link state packet" Amendment, dated November 3, 2008, p.4, lines 24-28. However, Examiner respectfully disagrees whether the grouping has anything to do with the assigned number. That is, just because information identifying the assigned numbers and the connectivity classes are encoded together into a link state packet, does not provide support that the grouping [of the local interfaces] into connectivity classes is *in accordance to the assigned numbers* [of the local interfaces].

With regard to the 112, 2nd rejection to claim 19, Applicant states "it is clear that each router has local interfaces which are used to connect that router to NBMA networks." Amendment, dated November 3, 2008, p.5, lines 22-23. However, Examiner respectfully disagrees with definitions of "local to said router".

If Applicant is arguing that "numbers, which are local to a router, are assigned to local interfaces of router to identify the local interfaces at that router, such a limitation is not found in the claim." Amendment, dated November 3, 2008, p.5, lines 25-27. First, Examiner reads in the preamble "... a plurality of routers, said router having a plurality of local interfaces ...", assuming leniently that each of said plurality of routers have a plurality of local interfaces. Second, it also says in the preamble that the router is in a communication network. Therefore, "local to said router" in line 6 can be local to the communication network. The preamble goes on to say that "a plurality of local interfaces to at least one connection-oriented non-broadcast multiple access network".

The communication network and the at least one connection-oriented non-broadcast multiple access network are clearly different. Therefore, "local to said router" in line 6 should be local to the communication network. If there is another local to a router, then such a limitation is not found in the claim.

In response to applicant's arguments, the recitation "NBMA network" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

If Applicant is arguing that "local connectivity information can be used as 'information identifying the assigned numbers and the connectivity classes' that is encoded into a link state packet". Amendment, dated November 3, 2008, p.5, lines 27-29, such a limitation is not found in the claim. Furthermore, Applicant directs Examiner to Fig. 3 for an example of such information. If Applicant is arguing "NMBA interface address" in Fig. 3, such a limitation is not found in the claim.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., local connectivity information, NMBA interface address) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With regard to the 103 rejection to claim 19, Applicant states that the present invention is generally directed to routing over large networks. Amendment, dated November 3, 2008, p.6, line 16. In the same paragraph, Applicant also mentions NBMS interfaces, OSPF routers, a single NBMA network, etc. Again, these specific limitations are not found in the claims, as explained above. Furthermore, Examiner notes that the title of the current application vaguely says Routing over Large Clouds. The title does not specify any type of network either.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 19-22** are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a procedure to determine NBMA connectivity, does not reasonably provide enablement for a method of operating a first router. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

Specification discloses a procedure to determine NBMA connectivity (Fig. 2), especially when the router has multiple interfaces to different NBMA networks (In Fig. 1, router 131 is the ingress router on the NBMA network and router 137 is not on the NBMA network, p.7, lines 17-19, inside and outside the "cloud"). In step 201, "a router uses one of several local methods to determine whether the router's interfaces are connected to the same NBMA network [or not]" (p.12, lines 12-14) and in step 202, "[a router] groups the interfaces into connectively classes using the local connectivity information [obtained in step 201]" (p.13, lines 1-2). Claim 19 recites "[the router] grouping the local interfaces into connectivity classes". Claim 19 does not recite how grouping is done or how the grouping limitation relates to the previous limitation "[the router] assigning a number to each local interface ..." or the previous limitation "the assigned number is local to the router". E.g. "grouping the local interfaces into connectivity classes according to the assigned number."

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 19-22** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 19, it is unclear what is meant by "local interfaces" in lines 2-3 and 5.

With regard to claim 19, it is unclear what is meant by "local to said first router" in line 6, or whether it means the immediate NBMA network wherein the first router is the ingress router of this NBMA network.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 19,20,22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Aggarwal et al. (U.S. 6,330,614) in view of Feldman et al. (U.S. Pat No. 6,055,561).

With regard to claim 19, Aggarwal discloses

assign a number to each of the local (**class C addresses, col. 7, line 27**) interfaces (**interfaces to hosts**) wherein each of said assigned number is local to said first router (**assign addresses in one of three classes, col. 7, lines 20-21; See Also classes A-E, col. 10, lines 32-33**);

grouping the local interfaces into connectivity classes (**Class A,B,C, col. 7, lines 25-28; See Also classes A-E, col. 10, lines 32-33**);

encoding the assigned numbers and the connectivity classes (**put into IP header in Fig. 8**); and

transmitting to at least one other router in the communication network (**routers in Fig. 9; See Also OSPF clouds, col. 11, line 10**).

However, Aggarwal fails to explicitly show link state packet.

Feldman discloses a link state packet **(link state advertisements) (a OSPF protocol exchanges first types of "link state advertisements to create OSPF routing tables, col. 16, lines 13-14).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a link state packet as taught in Feldman, with Aggarwal, to provide for a routing table for routing to destination.

With regard to claim 20, the combination of Aggarwal and Feldman discloses the method of claim 19.

Feldman further discloses OSPF link state advertisement **(OSPF protocol and link state advertisements) (a OSPF protocol exchanges first types of "link state advertisements to create OSPF routing tables, col. 16, lines 13-14).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a link state packet as taught in Feldman, with Aggarwal, to provide for a routing table and shortest path to destination.

With regard to claim 22, the combination of Aggarwal and Feldman discloses the method of claim 19.

Feldman further discloses an ATM network **(ATM environment, col. 1, line 17).**

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an ATM network as taught in Feldman, with Aggarwal, to provide for high performance, high capacity communication, and in particular for real-time services. Feldman, col. 1, lines 48-50.

8. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Aggarwal and Feldman as applied to claims 19 above, and further in view of Luciani (U.S. Pat No. 6,418,476).

With regard to claim 21, the combination of Aggarwal and Feldman discloses the method of claim 19. However, the combination fails to explicitly show opaque fields of the link state packet.

Luciani discloses opaque fields of the link state packet (**Fig. 5**).

At the time of the invention, it would have been obvious to a person or ordinary skill in the art to combine opaque fields of the link state packet as taught in Luciani, with Aggarwal and Feldman, for the benefit of synchronizing NAT tables.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Blanche Wong/
Examiner, Art Unit 2419
January 26, 2009
/Chirag G Shah/
Supervisory Patent Examiner, Art Unit 2419